

*4 November*  
24 September 1959

MEMORANDUM FOR: Assistant Director, CR

SUBJECT : Automation of Information Retrieval

1. The need for accurate and rapid information retrieval from OCR files is just as essential today as it will be next year or within the next five years. Our present system does not give uniform input or retrieval results, yet we are spending a great deal of effort to determine what storage and retrieval machinery we need in order to provide rapid and "sophisticated" information storage and retrieval service. We know now that regardless of the type of equipment selected our indexing input must be more accurate, specific and uniform.
2. I believe that the Intellofax input should be modified just as soon as indexing requirements are determined by the OCR Automation Development Group and the necessary training of personnel can be accomplished rather than wait until the type of storage and retrieval equipment to be used is decided.
3. The problem of additional personnel requirements will become the most important one to solve inasmuch as any changes in our indexing (coding) requirements so as to obtain more specific and uniform retrieval will require some two to six times more coders than we now have on our T/O. The only way to provide the additional slots within our present T/O ceiling is to mechanize and modernize our document processing system so as to eliminate dissemination and clerical jobs and thereby free the slots for coder jobs.
4. I believe, the key to the mechanization of our processing system is the development of a key-board machine for each coder so that document identifying data and index codes can be provided on paper tape during the coding step. This paper tape can be used for:
  - a. Controlling the processing of documents
  - b. Transferring data to punched cards, magnetic tapes, or other storage media
  - c. Preparing aperture cards
  - d. Preparing cross-reference lists in lieu of CIA Library source cards
  - e. Dissemination of copies to interested offices
  - f. Preparing statistical reports and studies.

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5. Our present system requires that documents be handled at each processing step which includes receipt, sort, screen, batch, disseminate, distribute, code, microfilm and type bibliographic data. In addition, the code sheets, the batch sheets, the microfilm and the aperture cards and the IBM cards go thru several different steps. If we can eliminate any handling step by combining operations, we should be able to save processing time and personnel. For example, by having the disseminators pass the processing copies of documents to the coders rather than sending them in the batch envelope to the distributors for separation and return to the coders, we have been able to save time in our processing cycle and the equivalent of a clerk in our distribution unit.
6. If a paper tape could be prepared by the coder and verification of the analysis and punching job were possible at the same time, the tape could under our present intellofax system be used to automatically punch IBM subject and area index cards. The code sheet and its preparation (and control) as well as the manual key punch and verification operations could be eliminated. The tape could also be used to prepare aperture cards and cards for the compilation of a source cross-reference list. Such tapes could be used as the basis for making dissemination determinations for the research offices. I assume the offices such as OCI and CSS/ORR could be serviced at our screening step so that their copies could be available immediately after receipt.
7. I believe other steps in the processing system could be mechanized to eliminate clerical chores. If the first page (or the top half of the first page) of each document could be reproduced on an IBM card the need for typing bibliographic mats could be eliminated.  of the ADG is already working on this problem.
8. I recommend that the Automation Development Group assign personnel on a full time basis to prepare a study (a) on the feasibility of using such a coding machine and other mechanical aids in our document processing system, (b) the detailed revisions of our procedures - both in the Document and Machine Divisions as well as the Library - which would be required were we to use such machines, and (c) the number of clerical jobs which could be eliminated so that slots for analysts could be created within our present T/O ceiling.

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Chief, Document Division